The Childrens Hospital of Los Angeles hESC Facility

Grant Award Details

The Childrens Hospital of Los Angeles hESC Facility

Grant Type: Shared Labs

Grant Number: CL1-00507-1.1

Investigator:

Name:	Carolyn Lutzko
Institution:	Children's Hospital of Los Angeles
Type:	PI

Award Value: $1,684,648

Status: Closed

Grant Application Details

Application Title: hESC Facility

Public Abstract:

Our institution is a tertiary-care academic pediatric medical center that combines care of severely ill children, research into the causes and treatments of childhood disorders, and training of the next generation of pediatric clinical physicians, nurses and allied health care professionals and biomedical scientists. A unique focus of the research in our institution is on applications to pediatric disorders such as diabetes, inherited disorders (cystic fibrosis, muscular dystrophy, sickle cell disease, etc), cancer and congenital birth defects. It is our central hypothesis that childhood disorders will be especially responsive to therapies produced by the use of stem cells; advances in the use of stem cells to treat childhood illnesses will then lead the way to treatments for the many disorders that occur later in life. For over a decade, the Stem Cell Program at our institution has been at the leading edge of translational research for cell and gene therapy and tissue engineering, with outstanding research programs in stem cells, gene therapy, developmental biology, organogenesis and transplantation immunology. Active research programs studying adult stem cells (hematopoietic, mesenchymal, pancreatic, hepatic, pulmonary, amniotic) and human and murine embryonic stem cells, interact closely with clinical Centers of Excellence in organ and hematopoietic stem cell transplantation, diabetes, cancer and blood diseases, neonatology, as well as a full array of pediatric secondary and tertiary care programs. These academically-oriented clinical programs have a long-standing tradition of inter-weaving research and clinical trials with patient care, to develop and evaluate innovative new treatments for severe pediatric and adult disorders. A Core Laboratory for studies with human embryonic stem cells (hESC) was established in 2005, using institutional funding. The hESC Core has supported initial studies and developed a formal training program in methods for the growth of hESC; 40 scientists from 5 research institutions in Southern California have attended the training course to date. However, the technical and regulatory burdens inherent in hESC research, have significantly restricted further development of individual hESC research projects within the limited existing laboratory space at our institution. Funding is thus requested to remodel and equip approximately 3000 sq ft of existing space (2500 sq ft of usable laboratory space) to create a suite of laboratories for dedicated use as an hESC Core facility alongside shared laboratory space for investigators involved in hESC research. We anticipate the laboratories and equipment established using this grant will support the research of at least 20 scientist investigators at our institution and will be also made available to researchers at nearby institutions across Southern California.

Statement of Benefit to California:

Development of methods for regenerative medicine using human embryonic stem cells (hESC) will have wide-spread applications to improve the health for millions of Californians and tens of millions of people world-wide, by providing novel, effective therapies. Regenerative medicine may provide new treatments for diseases including diabetes mellitus, Parkinson's disease, organ failure and injuries, inherited diseases and cancer and leukemia. The major challenge facing the field of regenerative medicine is to increase knowledge of the processes by which the mature cells of tissues (pancreas, brain, bone marrow, etc.) develop from stem cells, so that clinical approaches can be developed to produce cells suitable for transplantation. It is essential to establish laboratory facilities that can be used for research on hESC in a centralized manner that complies with all California and Federal guidelines. The hESC Core Laboratory and shared facilities to be developed based on this application will provide a resource to support research in stem cells by investigators from our institution, as well as investigators from across the Southern California region.
